complicated; it is provided for only six lines, but on each of these may be placed several clocks. The lines are shorter, and radiate only in the quarter which surrounds the horary centre; but they are special to the service of clocks, and are not subject to the complicated operation which is necessary on the circuit of the *mairies*. This service has been organised under the direction of the City Engineers, and does them the highest credit; no doubt it will be gradually developed, so as to include the whole of the *mairies* of Paris.[1]

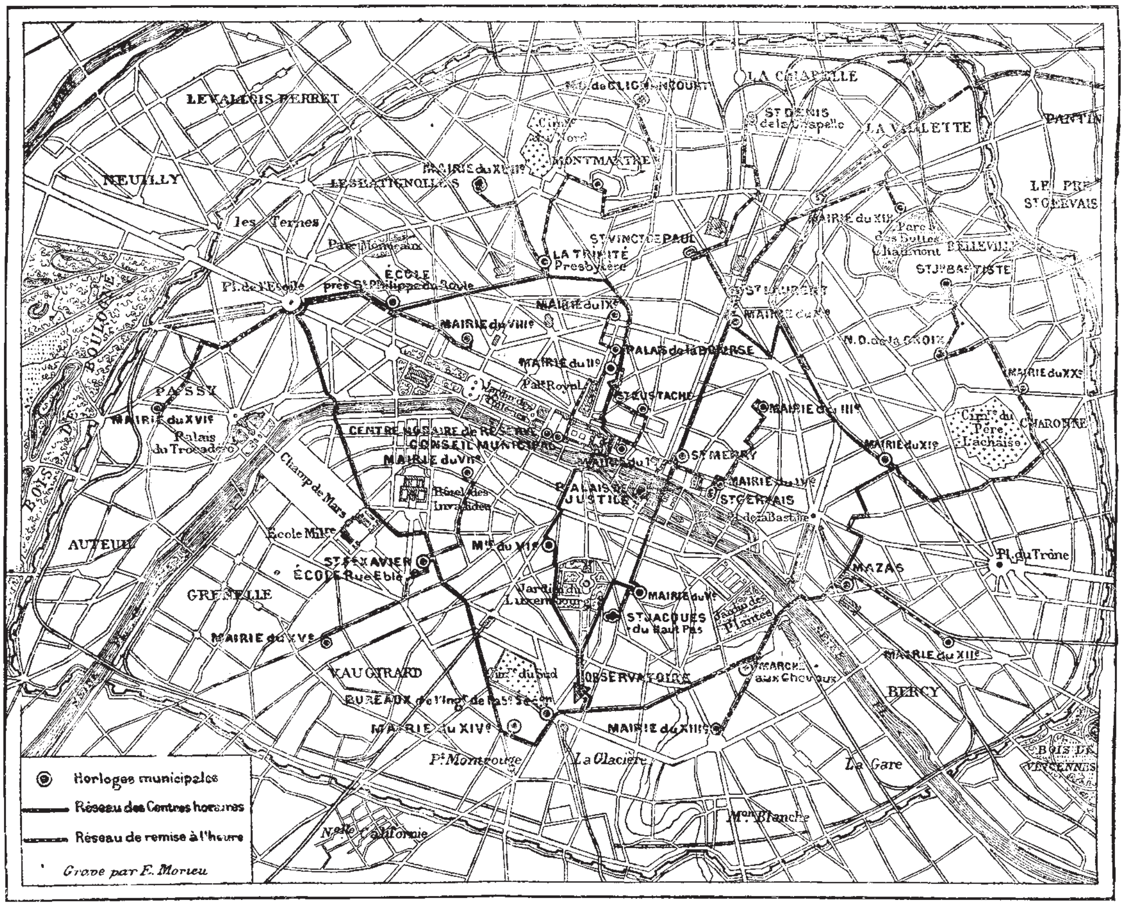

FIG. 3.—Telegraph for the Unification of Time in Paris.

NOTES

THE honour of knighthood is to be conferred on Dr. James Risdon Bennett, F.R.S., President of the Royal College of Physicians.

M. MARCEL DESPREZ, the well-known electrician, has been created a Knight of the Order of the Legion of Honour.

THE first volume of the U.S. Geological Survey, issued under the headship of Mr. Clarence King, is a magnificent quarto by Prof. O. C. Marsh:—"Odontornithes: a Monograph on the Extinct Toothed Birds of North America"; with thirty-four beautifully executed plates and forty woodcuts. We hope to refer in detail to Prof. Marsh's work very soon.

IN the House of Commons on Tuesday Mr. Shaw-Lefevre said that both the botanical and mineralogical collections have been already removed from the British Museum to the new Museum of Natural History at South Kensington, and are now being arranged there. It is expected that these collections will be open to the public on the next bank holiday—namely, Easter Monday, April 18.

THE Paris Exhibition of Electricity will contain a number of curiosities. M. Salignac will present to the Director-General a plan for cooking by electricity in the grill-room of the restaurant. This plan should provide useful work during the day for the magneto-electric machinery, and test its warming power. M. Michels, an American residing in Paris, has patented a revolving carbon which can be rolled like an ordinary conductor.

WE have now more detailed information about the earthquake which was felt in the Swiss Jura on January 27 at 2h. 18m. p.m. There were two shocks at an interval of five seconds. They were felt especially at Berne, where several chimneys were thrown down, the bell of a church sounded, and the ceiling of a school fell down. At St. Imier the shocks were also rather strong. They were felt also at Neufchâtel, Corcelles, Fontaines, Colombier, Auvernier, and Chaux-de-Fonds to west; at Morges (but not at Lausanne) to south-west; at Solothurn, Basel, and Zürich to north and north-east; and at Signau, Hüttwyl, Berthoud, and Thoune to south and south-east. Two smaller shocks were felt: one on the same day at six o'clock in the evening, and the other at three o'clock on the morning of the following day.

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[1] From an article in *La Nature*, by M. A. Niaudet.

SHOCKS of earthquake were noticed at Baraccone, Italy, on January 31, at 8.30 p.m.; at Fiume, Hungary, on the night of January 3-4, at 2.26, direction, north-east to south-west, duration, two to three seconds; in Upper Italy, *e.g.* at Ancona, on the night of January 3-4.

THE incredulity with which the news about an earthquake at St. Petersburg was met in some quarters, when M. Wagner described it some years ago in consequence of quite unusual oscillations of the level of his transit-instrument at Pulkova, seems to be unfounded. We learn from Russian papers that on January 26, at 2.15 p.m., an earthquake was felt at Narva and at the Korff railway station, as well as on the estates of Lagen and Repnik, seven and eight miles distant from Narva. At all these places it was accompanied with a subterranean noise.

AT the Observatory of Pawlowsk, Russia, extraordinary magnetic perturbations (variations 2°) were noticed on the evening of January 31. On the same evening an auroral display was visible in different parts of the Russian Empire, *e.g.* in Western Siberia, at Ekaterineburg and Irbit (Ural), at Baltishport, and at Hasenpoth.

ON Saturday evening last the President of the French Republic, accompanied by all the members of the Government, visited the Paris Bourse in order to witness some experiments with Mr. Graham Bell's photophone. M. Antoine Breguet began by explaining the principles of the wonderful invention, after which experiments were made over a distance of fifty metres, by means of an electric light produced by a Gramme machine and a Serrin lamp.

M. BOGDANOFF, who took part in the Russian North Sea Expedition sent out during last summer, communicated, at the general meeting of the St. Petersburg Society of Naturalists, his observations on the influence of whaling on the fishing on the Normannic coast, which illustrates very well the complicated chain which exists in the animal world. The whale used to be very important to the fisheries, as during the spring it drove to the coast immense shoals of small fishes. Now, whaling being pursued by means of steamers which use a bullet instead of the old harpoon, and the annual number of whales killed being, during the last seventeen years, from 50 to 143, the amount of small fishes coming to the coast has much diminished. Besides, the great quantities of fat which are thrown into the sea at Varanger attract sharks, and these last destroy cod-fish, so that now the cod-fishing is nearly extinct in the western parts of the Varanger fjörd region.

MR. WALLACE in his "Island Life," pp. 495, 496, has discussed the apparent inability of Australian plants to become naturalised in the northern hemisphere. The gist of his explanation is the want of elasticity in their constitution, owing to their long-continued insular and uniform conditions of existence. The accompanying extract from the Report of the Government Gardens at Rangoon for 1880 points to the incapacity of even the vegetation of Tropical Australia to stand really humid climatic conditions:—"The Australian Eucalypti grew well during the dry weather, and some of them were four feet in height when the monsoon commenced; they then damped off one after another, as did also the Australian Acacias and the Queensland Ficus. The Moreton Bay Chestnut is not flourishing. From the above it will, I think, be evident that plants of Tropical Australia will not readily accommodate themselves to this very moist climate." It may be added that the result of attempting to grow species of *Eucalyptus* from all parts of Australia in the West African Settlements has uniformly failed, and apparently from the same cause.

SOME experiments have been made at the Cawnpore Experimental Farm during 1879-80 on the cultivation of imported English and American wheats and barleys. The result seems to point to the conclusion that the time available for the growth of cereals in India is too short to allow of English and American varieties being grown with success unless possibly the seed is sown in September and runs a risk of being damaged by excessive heat. Experimental sowings were made of three kinds of English and three kinds of American wheat, as well as of three kinds of barley. All nine sowings were complete failures. The seeds in most cases germinated freely, and the plants spread out into stools in a manner very different to the habit of country wheat. But all crops grew extremely slowly, and were still green when native wheat had finished ripening. In consequence the hot winds of March completely shrivelled up whatever grain had been formed, and no crop worth the name was gathered.

THE Manchester Field Naturalists' Society has recently attained its majority, and the event has been marked by a social meeting of past and present members in honour of the founder, Mr. Leo Grindon, author of "Manchester Walks and Wild Flowers," &c. In 1860 Mr. Grindon gathered around him a company of friends wishful to make some acquaintance with nature, and fortnightly summer excursions were established under his pleasant guidance. A prominent feature of the Society's proceedings has been the winter *soirées*. Now that the possibility of establishing a successful society, whose aspirations may be thought by some incompatible with commercial pursuits, has been demonstrated, the executive will do wisely to thoughtfully extend their operations in the direction of the Society's aims. Some attention has been paid to such practical matters as tree-planting in towns and window-gardening, and the discussion of such questions will tend to give a firmer hold upon public favour. Lancashire contains an unusual number of field-clubs, some of which have been inspired by this Society, whilst others were earlier in existence. In one of his letters the late Mr. Carlyle laments that "for many years it has been one of my constant regrets that no schoolmaster of mine had a knowledge of *natural history*, so far at least as to have taught me the grasses that grow by the wayside, and the little winged and wingless neighbours that are continually meeting me with a salutation which I cannot answer." Had he been a native of Lancashire he would have found many instructors willing to read him the lessons of the wayside.

ON the 9th inst. the Dundee Naturalists' Society held their sixth annual *conversazione*, which seems to have been quite successful. All sorts of scientific *matériel* were exhibited, and among other lectures given was one by Dr. McIntosh of Murthly on Sponges. This society is evidently in a flourishing condition, and is no doubt doing something to create an interest in science in the important seaport in which it is located.

MR. QUARITCH has just issued the second part of his new Catalogue of Works on Natural History. It seems to contain a large number of very scarce and valuable works.

A FEW months ago three large blocks of petrified wood were found in the Devonian bed at Döppersberg, Germany. They were recognised by Prof. Göppert of Breslau as belonging to a fossil Araucaria, named by him *Araucarites Elberfeldensis* (Döppers).

THE Baltic Centralverein für Thierzucht und Thierschutz will hold its third exhibition of domestic birds on March 11-13 at Greifswald. In addition the exhibition will include living and dead freshwater and marine fish, fish embryos, &c., and all apparatus pertaining to pisciculture and fishing.

AN important step has been attained in telephony by Dr. Cornelius Herz, by which the principle of magnetism has been entirely discarded and the magnetic receiver abolished. A long series of experiments have been successfully conducted under the patronage of the French Government on the telegraphic lines of the State; concluding trials were witnessed, among others, by M. Cochéry, Minister of Postal Telegraphy, M. Jules Ferry, Prime Minister, M. Leon Say, President of the Senate, M. Becquerel, and other Members of the Academy of Sciences, and other Members, Senators, Deputies, and a great number of engineers. One of the most extraordinary experiments was the transmission of speech on a single wire from Tours to Brest, on a wire passing through Paris, the length of which exceeded eight hundred miles. One single Leclanche's element was the sole battery in use.

SOME dredging work which is going on at Zürich in the bed of the Limmat has brought to light the shore pillars of a Roman bridge, as well as the skeleton of a prehistoric stag.

INTERESTING new discoveries have been made at Pompeii. In block 7 of the 9th district a house has been excavated which was in course of construction when the terrible catastrophe occurred, and which differs materially from all other Pompeiian houses in its plan. In another house a large square piece of black glass was found fixed into the wall, which when slightly moistened forms the most perfect mirror. In a third house various wall-paintings were discovered, which however are rather of artistic than scientific interest.

THE newly-elected Municipal Council of Paris has been summoned by the Prefect of the Seine for a session which will begin on the 11th inst. It is stated that one of the proposals made will be to establish in Paris a system of police telephonic stations, as practised in Chicago.

M. JULES FERRY has created a library for patients in every hospital in Paris. The system will be extended to the whole of France.

AT the meeting of the Royal Academy of Sciences at Berlin on January 27 last, the year's report (for 1880) for the Humboldt Institution for Natural Research and Travels was read. Prof. du Bois Reymond, in conjunction with Prof. G. Fritsch, is about to publish the observations and experiments made by the late Dr. Karl Sachs on *Gymnotus electricus* in South America during 1876 and 1877, by order of the Institution. The present traveller of the Institution, Dr. Otto Finsch, after staying for nearly a year upon Talint Island (one of the Marshall group) proceeded to Matupi (on the north coast of New Britain) at the end of last year. His last letter is dated October 27, 1880, and he announces that he has made rich zoological collections. He intended to visit New Ireland and New Guinea if possible, and then to return to Europe by way of Dutch East India. Four of Dr. Finsch's collections have arrived at Berlin; a fifth is announced by his first letter from Matupi. The funds of the Institution have been increased by small legacies. The sum which will be at the disposal of the Institution for 1881 is 12,750 marks (635*l.*)

THE Sydney correspondent of the *Colonies* writes:—"We have long had in Sydney splendid botanical gardens, containing the choicest plants in the world, but we have only recently started a 'Zoological Gardens,' though Melbourne has had one many years, which has been brought to a high degree of perfection. Last week a deputation waited on our Colonial Secretary, asking for funds to stock the Gardens. Sir Henry Parkes replied that if the members of the Zoological Society would undertake next year to put as many animals in the grounds of the Sydney Zoological Gardens as they have in Melbourne, he would guarantee them 10,000*l.* from the Government. The offer was not accepted."

THE *Chrysanthemum* is the title of a monthly magazine "for Japan and the Far East," the first number of which has been sent us. The contents are mostly of a literary character, the main object of the magazine being "to aid in bringing the pales of Eastern and Western thought into such contact as may result in the diffusion of a general warmth and light around us." The publishers are Kelly and Co. of Yokohama, the English agents being Trübner and Co.

A SKELETON of a mammoth has been discovered at Bendery, Government of Bessarabia, in the upper clay drift.

THE St. Petersburg Society of Naturalists has already 276 Fellows; the Mineralogical Society has 398 members.

THE Commission of Fisheries of the United States have sent a quarter of a million ova of the American whitefish to Bremen, *en route* for the Lake of Constance, where the attempt to acclimatise this fish is to be made.

THE centenary of the birth of the philosopher Karl Christian Friedrich Krause will be celebrated on May 6 next at his birthplace, Eisenberg (Saxe-Altenburg). At the same time a simple monument with a bronze bust of Krause will be unveiled. The design is by Herr Enger of Altenburg, the bust by Robert Henze of Dresden. A Krause Scholarship has also been established at the Gymnasium.

WE have on our table the following books:—"Practical Plane Geometry," John W. Pallister (Simpkin); "Introduction to Study of Indian Languages," J. W. Powell; "Journal of Iron and Steel Institute, 1880" (Spon); "Practical Botany," D. Houston (W. Stewart); "Popular Scientific Lectures," 2nd series, Helmholtz (Longmans); "The Evolutionist at Large," Grant Allen (Chatto and Windus); "Journal of Royal Society of New South Wales;" "Extinct British Animals," J. E. Harting (Trübner); "Calendar of University of Wales, 1880-81;" "The Silk Goods of America," 2nd edition, W. C. Wyckoff; "London Catalogue of British Mosses" (Bogue); "The Statistical Atlas," part 1, G. P. Bevan (W. and A. K. Johnston); "Kamelaroi and Kurnai," Fison and Howitt (Macmillan and Co.); "Meeresfauna," K. Möbius (Otto Enstin); "Annuaire pour l'an 1880" (Villars, Paris); "A Polar Reconnaissance," A. H. Markham (Kegan Paul); "Natural History of British Fishes," Frank Buckland (S.P.C.K.); "Ventilation and Heat," Frederick Edwards (Longmans); "Practical Physics," A. H. Worthington (Rivington); "Muscles and Nerves," Dr. T. Rosenthal (Kegan Paul); "Natural Philosophy Examination Papers," Rev. G. Molloy (Browne and Nolan); "On some Properties of the Earth," O. Reichenbach; "Evolution, Expression, and Sensation," John Cleland (Maclehose, Glasgow); "The Wild Coast of Nipon," Capt. H. C. St. John (Douglas).

OUR ASTRONOMICAL COLUMN

THE SO-CALLED NOVA OF 1600.—Referring to a note which recently appeared in this column on "Janson's Star of 1600," Prof. van de Sande Bakhuysen, Director of the Observatory of Leyden, writes us that "Janson or Gulielmus Jansonius is Willem Jansz Blaeu, who is well known as the maker of globes, which are now very rare, and as editor of a treatise on the use of globes, of different treatises on navigation, and of a great number of charts and different atlases. From 1598 till his death in 1638 he lived in Amsterdam. Janson signifies that he was the son of Jan (John), but his family name was Blaeu." This explanation will be acceptable to those who may have been perhaps somewhat in doubt as to the correct form of identifying the discoverer of the variable star of 1600; Kepler styled him Jansonius, without reference to what Prof. Bakhuysen states to have been his surname: and he is frequently called Jansen. Lalande refers to the globes constructed by Blaeu as the best of the period, and the fact of his remarking the star in question, of which there is no previous mention, proves that he was a careful